
STANDARDS AND RECOMMENDED PRACTICES

Approved American National Standards

The American National Standards Institute approved two American National Standards on April 4, 1983: ANSI V98.31M-1983, Video Recording — 3/4-in. Type E Helical Scan — Small Video Cassette; and ANSI V98.18M-1983, Video Recording — 1-in. Type C Helical Scan — Basic System and Transport Geometry Parameters. Copies of the Standards are available for a nominal fee from the American National Standards Institute, 1430 Broadway, New York, NY 10018.

Approved SMPTE Recommended Practices

The Society's Executive Committee for Standards Approval approved two revised SMPTE Recommended Practices on May 25, 1983: RP 67-1983, Specifications for Buzz-Track Test Film for 16-mm Motion-Picture Sound Reproducers, Photographic Type; and RP 96-1983, Specifications for Subjective Reference Tapes for Helical-Scan Video Tape Reproducers for Checking Receiver/Monitor Setup. SMPTE Recommended Practices are available from Society Headquarters for \$1.50 each.

Approved International Standard

The International Organization for Standardization (ISO) recently approved an International Standard, the technical content of which is published here for your information. ISO 359-1983, Cinematography — Projectable Image Area on 16-mm Motion-Picture Prints — Dimensions and Location, is in accord with American National Standard ANSI PH22.8-1981, Dimensions of Projectable Image Area on 16-mm Motion-Picture Film. This material is reproduced with permission from the ISO and is copyrighted by the American National Standards Institute, 1430 Broadway, New York, NY 10018, from which copies are available.

Reaffirmed SMPTE Engineering Committee Recommendation

Acting on behalf of the Board of Governors, the Executive Committee for Standards Approval approved on May 23, 1983, reaffirmation of SMPTE Engineering Committee Recommendation ECR 1-1978, Alignment Color Bar Test Signal for Television Picture Monitors. The recommendation is available from Society Headquarters for \$1.50.

Editorially Revised SMPTE Recommended Practices

Two proposed SMPTE Recommended Practices are subject to a trial period and public review. The technical content of the proposals is unaffected because the modifications are editorial in nature. The changes are being published for your review and comment.

RP 48, Lubrication of 16-mm and 8-mm Motion Picture Prints (revision of RP 48-1973 published in the March 1973 *Journal*): Addition of a section on measurement of the degree of lubrication in accordance with American National Standard Methods for Detecting the Degree of Lubrication on Processed Photographic Film by the Paper-Clip Friction Test, ANSI PH1.47-1972 (R1979) and tutorial information in an appendix.

RP 80, Specifications for Azimuth Test Film for 35-mm Striped Four-Track Release Print Audio Reproducers, Magnetic Type (revision of RP 80-1977 published in the June 1978 *Journal*): The practice has been modified to conform with established test film documents. The total harmonic distortion of the recorded signals has been reduced to 0.2 percent and the azimuth of the audio record has been changed to $90 \pm 3'$ to the reference edge of the film.

Copies of the proposals are available from Society Headquarters for \$1.00 each. The proposals will be submitted to the Executive Committee for Standards Approval if no adverse comments are received from publications. Comments should be addressed to Alex E. Alden, Manager of Engineering, prior to January 1, 1984. — Alex E. Alden, Manager of Engineering

SMPTE Standards Subscription Service

The Society provides a Standards Subscription Service to assist firms, libraries, and individuals in establishing and maintaining a complete and current file of approved American National Standards and SMPTE Recommended Practices in the motion picture, television, and video magnetic recording fields. Through this service, the Society makes automatic distribution to Standards Subscribers of all new and revised American National Standards and SMPTE Recommended Practices that are approved during the calendar year in these fields.

For further information, write to: Standards Subscription Service, Engineering Department, Society of Motion Picture and Television Engineers, 862 Scarsdale Avenue, Scarsdale, N.Y. 10583.

ANSI V98.31M-1983 American National Standard for video recording – 3/4-in type E helical scan – small video cassette

Approved April 4, 1983

Secretariat: Society of Motion Picture and Television Engineers

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1. Scope

This standard specifies the dimensions of a video cassette for use with a 3/4-in Type E helical-scan video tape recording cassette system, operating at a tape speed of 95.3 mm/s (3.75 in/s).

2. Reference Standard

The following American National Standard is intended to be used in conjunction with this standard:

ANSI C98.21M-1980, Dimensions and Location of Records for 3/4-in Type E Helical-Scan Video Tape Cassette Recording

4. Dimensions

4.1 The dimensions necessary for the interface of equipment shall be as specified in the figures and table.

4.2 The metric dimensions are primary.

3. Datum Planes

3.1 Datum Plane A is the plane determined by Spots A, B, and C in Fig. 5.

5. Measurement Environment

The temperature shall be $20 \pm 1^\circ\text{C}$ ($68 \pm 2^\circ\text{F}$) with a relative humidity of 50 ± 2 percent.

Table 1
Dimensional Tolerances Not Otherwise Specified

Millimeters		Inches	
Over	To	Over	To
0.0	4.0	0.000	0.157
4.0	16.0	0.157	0.630
16.0	63.0	0.630	2.480
63.0	250.0	2.480	9.843

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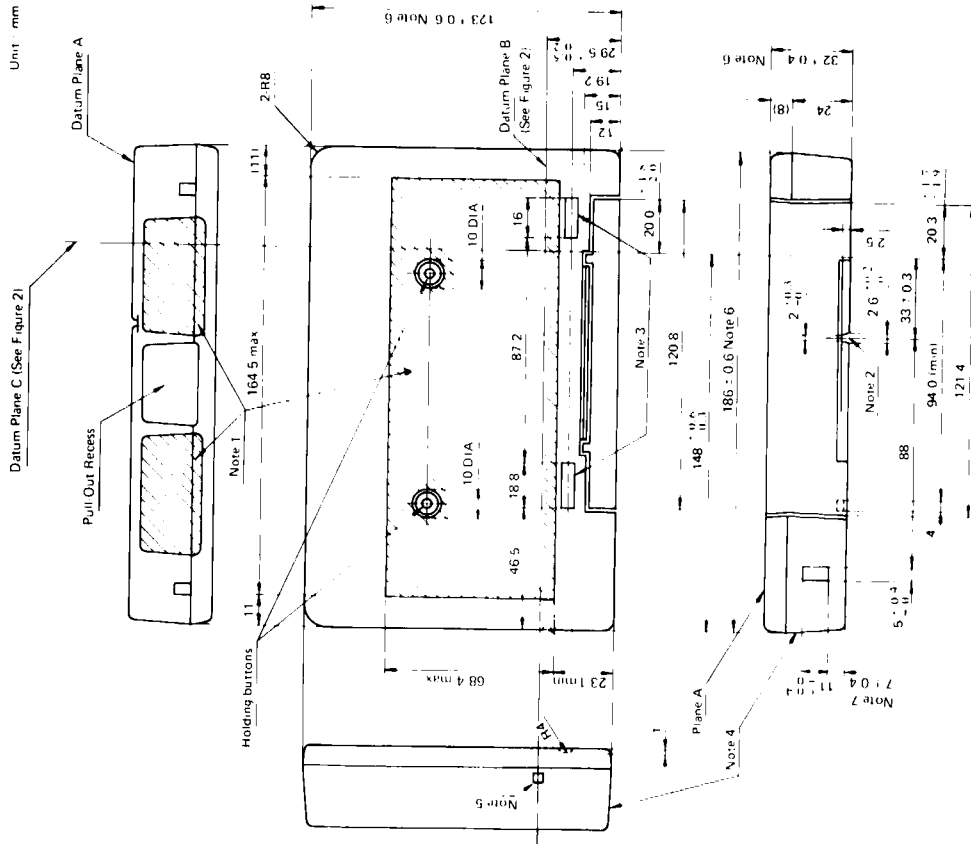


Fig. 1
Top View of Video Cassette

NOTES:

1. Hatched area shows the label area and/or window area.
2. Guide groove.
3. Holding groove.
4. The outer edges should be slanted, but not more than 5° from vertical.
5. An adaptor recess should be on both sides.
6. These dimensions are inspected by using limit gauges.
7. The dimension shall be specified from Datum Plane A. (See Fig. 5.)

ANSI V98.31M-1983

Unit: mm

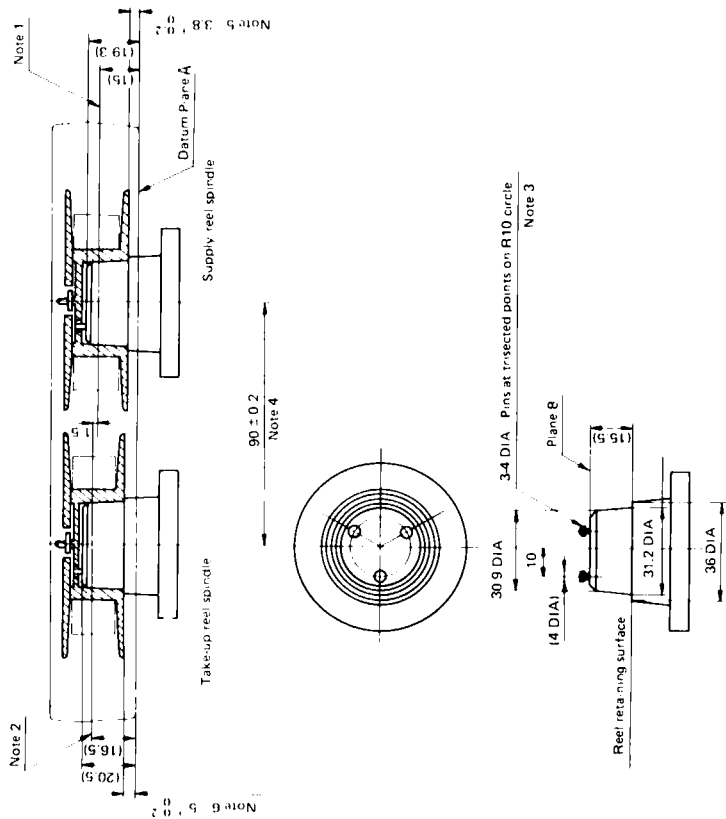


Fig. 4
Relationship between Reels and Spindles

- NOTES:
- Center of tape on supply reel when cassette is inserted in recorder/player.
 - Center of tape on take-up reel when cassette is inserted in recorder/player.
 - Pins of the reel spindle drive the reel and can be pressed down to the level of Plane B.
 - Distance between centers of two reel spindles.
 - Distance between reel retaining surface of supply reel and Datum Plane A of cassette when cassette is inserted in recorder/player.
 - Distance between reel retaining surface of take-up reel and Datum Plane A of the cassette when cassette is inserted in recorder/player.

ANSI V98.31M-1983

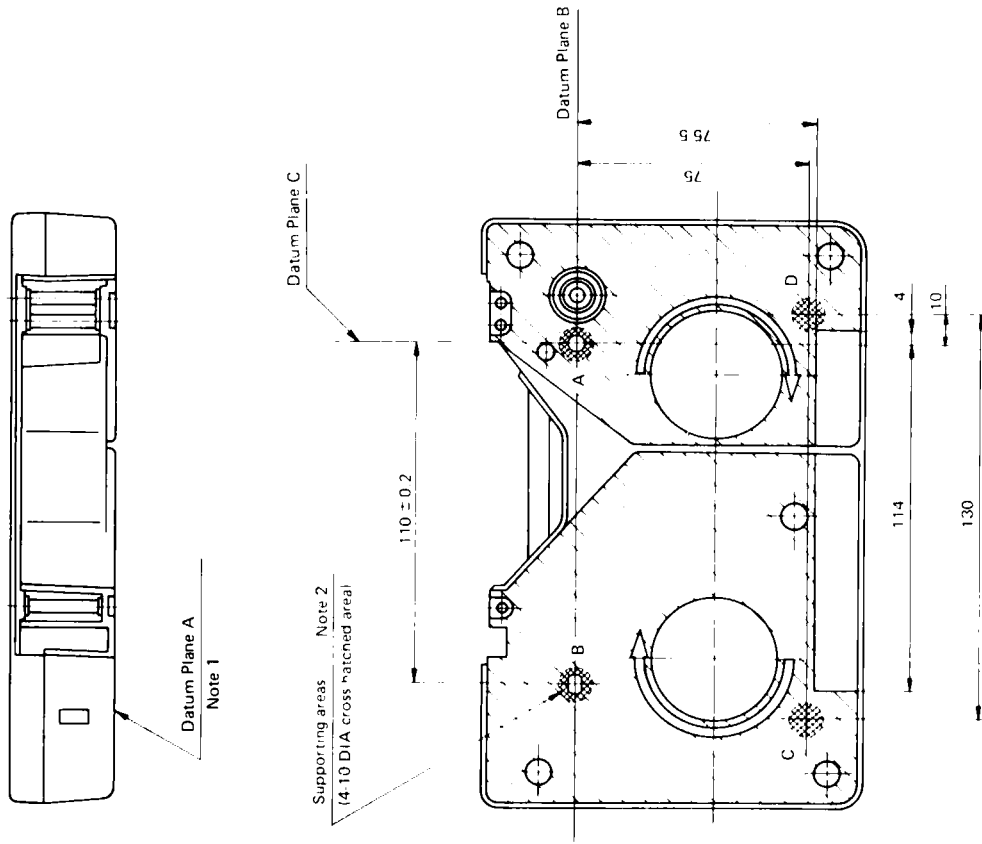


Fig. 5
Flatness of Bottom Surface of Cassette

- NOTES:
- Datum Plane A is determined by Datum Spots A, B, and C.
 - Datum Spot D shall be coplanar within 0.2 mm (0.008 in) of Datum Plane A.
 - Flatness of the hatched area shall be coplanar within 0.5 mm (0.020 in) of Datum Plane A.

ANSI V98.31M-1983

American National Standard for video recording – 1-in type C helical scan – basic system and transport geometry parameters

Approved April 4, 1983
Secretariat: Society of Motion Picture and Television Engineers

1. Scope

This standard specifies the general video record system, video pole tip locations, scanner parameters, scanner-guide locations, tape tension, and test conditions for 1-in Type C helical-scan video tape recorders operating on the 525/60 monochrome or NTSC color systems.

2. Reference Documents

The following American National Standards and SMPTE Recommended Practices are intended to be used in conjunction with this standard:

- ANSI C98.19M-1979, Dimensions and Location of Records for 1-in Type C Helical-Scan Video Tape Recording
- ANSI C98.20M-1979, Frequency Response and Reference Level of Recorders and Reproducers for Audio Records for 1-in Type C Helical-Scan Video Tape Recording

The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights.

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V98.24M, Dimensions of Video Magnetic Tape Reels for 1-in Helical Scan Video Recorders (available from the Society of Motion Picture and Television Engineers)

ANSI V98.25M-1982, Dimensions of 1-in Video Magnetic Recording Tape

SMPTE RP 85-1979, Tracking Control Record for 1-in Type C Helical-Scan Video Tape Recording

SMPTE RP 86-1979, Video Record Parameters for 1-in Type C Helical-Scan Video Tape Recording

3. General Specifications

3.1 Dimensions in the metric system are primary.

3.2 Tests and measurements made on the recorder to check the requirements of this standard shall be made under the following atmospheric conditions:

Temperature for drum diameter	23 ± 0.5 °C
tests	23 ± 1 °C
Relative humidity	50 ± 2 percent
Barometric pressure	86 to 106 kPa (860 to 1060 mbar)
Conditioning before testing	24 h

4. Video and Sync Record System

4.1 Exactly one field of video shall be recorded during each scanner revolution. The record shall be divided into two parts, video and sync.

4.2 The video record shall contain all active picture lines and sufficient vertical sync information for playback synchronization. Information not contained in the video record is defined as the vertical-interval dropout. (See ANSI C98.19M-1979.)

4.3 The sync record shall contain a number of horizontal TV lines during the vertical interval including those of the vertical-interval dropout and sufficient overlap of information for playback switching. (See ANSI C98.19M-1979.)

4.4 Recording of the sync record shall be optional; however, no other information shall be recorded in the allotted tape area.

5. Scanner Pole Tips

5.1 There shall be six circumferential pole tip locations as shown in Fig. 1, top-view. When an operational pole tip is not required, a suitable nonfunctional tip shall be placed in the same location.

5.2 Each tip projection shall be 0.06 ± 0.03 mm, measured from the outer surface of the upper drum to the end of the pole tip.

5.3 The axial distance between each video head pole tip and its associated sync head pole tip shall be as shown in Fig. 1, side view.

6. Scanner Guides

6.1 Location of the tape entrance and exit guides shall provide a tape wrap angle such that the video record vertical-interval dropout is 10.00 ± 0.25 horizontal lines due to loss of head-to-tape contact, with no electronic switching of the recording signal. Start and end of the vertical-interval dropout shall be measured at the half-amplitude points of the RF envelope.

6.2 The helix angle formed by the scanner and all associated tape guides shall be 2 35'29" ± 2".

7. Drum Diameter and Tape Tension

Effective drum diameter, tape tension, helix angle, and tape speed completely determine the video record track angle. Different methods of design and/or minor variations in drum diameter and tape tension will produce equivalent recordings for interchange purposes. Values and operating conditions specified in this standard will produce the reference value of track angle. (See ANSI C98.19M-1979.)

7.1 The actual upper drum diameter shall be 134.620 ± 0.018 — 0.000 mm.

7.2 The actual lower drum diameter shall be 134.580 ± 0.000 — 0.018 mm.

7.3 The upper drum section shall rotate in synchronism with the video tips.

7.4 The center span tape tension shall be 1.7 ± 0.3 N.

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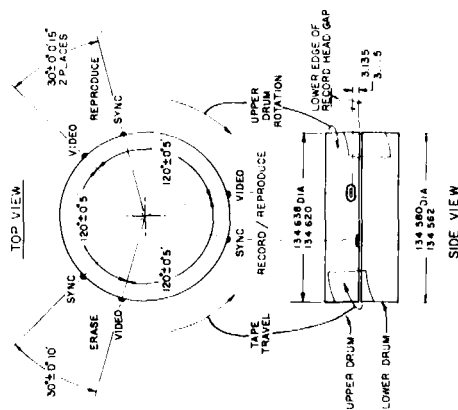


Fig. 1
Pole Tip Locations and Drum Dimensions

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